

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (currently amended):** A step-up transformer for
2 magnetron driving, comprising:
3 a magnetic circuit, including a middle core section,
4 an outer core section and a coupling core section for
5 coupling the middle core section and the outer core
6 section, formed by an arrangement of two ferrite cores
7 opposed to each other with a gap interposed therebetween,
8 and
9 a primary winding and a secondary winding arranged to
10 surround the middle core respectively,
11 wherein a sectional area of the middle core is
12 increased;
13 a number of winds in a radial direction of the primary
14 winding to be wound around the middle core is increased and
15 a number of winds in an axial direction is decreased;
16 a number of winds in a radial direction of the
17 secondary winding is increased and a number of winds in an
18 axial direction is decreased;
19 the primary winding and the secondary winding are
20 provided close to each other interposing an insulator, and
21 a sectional area of the outer core is set to be

22 smaller than that of the middle core,
23 wherein a height of a cross section of the outer core
24 is smaller than a height of a cross section of the middle
25 core.

1 **Claim 2 (original):** A step-up transformer for
2 magnetron driving according to Claim 1, wherein sectional
3 area of the outer core is set to be same as or smaller than
4 a half of the sectional area of the middle core.

1 **Claim 3 (original):** A step-up transformer for
2 magnetron driving according to Claim 1, wherein the two
3 ferrite cores include two U-shaped cores, or one U-shaped
4 core and one I-shaped core.

1 **Claim 4 (original):** The step-up transformer for
2 magnetron driving according to Claim 3, wherein shapes of
3 the two U-shaped cores are identical to each other.

1 **Claim 5 (original):** The step-up transformer for
2 magnetron driving according to Claim 1, wherein each of
3 sectional shapes of the middle core section and the outer
4 core section is an oval including a circle or a polygon.

1 **Claim 6 (currently amended):** ~~The step-up transformer~~
2 ~~for magnetron driving according to Claim 5, wherein, in~~

3 ~~such a case that~~ A step-up transformer for magnetron
4 driving, comprising:

5 a magnetic circuit, including a middle core section,
6 an outer core section and a coupling core section for
7 coupling the middle core section and the outer core
8 section, formed by an arrangement of two ferrite cores
9 opposed to each other with a gap interposed therebetween,
10 and

11 a primary winding and a secondary winding arranged to
12 surround the middle core respectively,

13 wherein a sectional area of the middle core is
14 increased;

15 a number of winds in a radial direction of the primary
16 winding to be wound around the middle core is increased and
17 a number of winds in an axial direction is decreased;

18 a number of winds in a radial direction of the
19 secondary winding is increased and a number of winds in an
20 axial direction is decreased;

21 the primary winding and the secondary winding are
22 provided close to each other interposed by an insulator;

23 wherein each of sectional shapes of the middle core
24 section and the outer core section is an oval including a
25 circle or a polygon;

26 such that a sectional area of the outer core is set to
27 be smaller than that of the middle core

28 a height in the case in which the middle core section

29 takes a sectional shape of a polygon is represented by h_1 ,
30 or a diameter in a direction of a height in the case in
31 which the sectional shape is an oval including a circle is
32 represented by D_1 , and

33 a height in the case in which the outer core section
34 takes a sectional shape of a polygon is represented by h_2
35 or a diameter in a direction of a height in the case in
36 which the sectional shape is an oval including a circle is
37 represented by D_2 ,

38 the values of h_1 , D_1 , h_2 and D_2 are set in such a
39 manner that the following formulae can be established:

40 $h_2 < D_1$, $h_2 < h_1$, $D_2 < D_1$ or $D_2 < h_1$.